11/16/16

Dear IRB Committee,

Please see my attached IRB application, "Teaching Students to Apply Learning Strategies to Coursework," being submitted for review under the Exempt category.

Contents:

- IRB Form 1
- Appendices
    - Appendix A: Informed Consent Document
    - Appendix B: Research Materials
    - Appendix C: Recruitment Procedures
- IRB Form 2

Thank you,
Melissa Lehman, Ph.D.

IRB FORM 1

LYNN UNIVERSITY INSTITUTIONAL REVIEW BOARD APPLICATION AND PROTOCOL FOR REVIEW OF RESEARCH INVOLVING HUMAN SUBJECTS IN A NEW PROJECT

The following information must be submitted in typed or word processed format. Fill in all information lines. If information is not applicable, indicate by answering "N/A."

Policy and Procedure

All human subject research and research-related activities involving human subjects conducted within or under the auspices of Lynn University by any faculty, employees or students, is subject to the Institutional Review Board (IRB) review, recommendations if warranted, and final approval. Under no conditions can proposed research begin prior to IRB review and written approval). If the application is judged to involve more than minimal risk, intentional deception, or questions pertaining to a protected population and does not meet the categories for exempt or expedited review, it must be presented to a convened full-board review board for discussion and consideration of approval or non-approval. The IRB reserves the right to request the investigator to provide additional information concerning the application for a procedural change. After review, the IRB will send the applicant formal notification of the approval status and the level of review.

FORM 1 is to be typewritten. Paginate ALL PAGES. Precede each Appendix with a separate page, providing the Appendix letter (A, B, etc.), and the title of the Appendix. Do not put the Appendix letter on the actual appendix. Follow APA. Complete the cover page, with a table of contents of FORM 1, (Part A, B, C, D), required Appendixes, and other Forms as needed. Complete all parts of FORM 1 if the category of research is "new project." For an application to continue (renew) a previously approved project, complete FORM 4. For a procedural revision to a previously approved project, complete FORM 5.

FORM 1, Part A. Application for Review of Research Involving Human Subjects

Project IRB Number:
Principal Investigator: (Full name and educational credentials) Melissa Lehman, Ph.D.
Principal Investigator Address: 3601 N Military Tr., Boca Raton, FL 33431
Project Title: Teaching Students to Apply Learning Strategies to Coursework
Students: Specify Degree Program (Employees enrolled in degree programs, complete this item.
Employees: (Specify position and employment unit) Assistant Professor, Psychology, College of Arts and Sciences
Phone number (work): 561-237-7454
Phone number (home):
Phone number (mobile): 561-242-1473
Fax number: 561-237-7216
E-mail: mlehman@lynn.edu
Faculty sponsor (if applicable):
Phone number (work):
E-mail:
Co-Investigators (Associate or Collaborating Investigators): Names, titles and addresses. If list exceeds this space, submit on a separate page.
Proposed starting date of research: 2/17
Expected duration of research activity and project end date: 1 year, 2/17

Is project periodically implemented at Lynn University, such as a survey or assessment tool?	
Yes ☐	If yes, please describe typical dates for implementation and survey or assessment tool.
No ☒	

Type of IRB review requested (Check one of the following)	
☐	Full Board (Submit electronic copy of IRB FORM 1)
☒	Exempt (Complete IRB FORM 2: Request for Exemption from Full Board or Expedited Review and include with IRB FORM 1) (Submit electronic of IRB FORM 1.)
☐	Expedited (Complete IRB FORM 3: Request for Expedited Review by the IRB and include with IRB FORM 1.)

Location of project implementation: Lynn University

Is research activity being conducted in a country other than the U.S.?	
Yes ☐	If yes, specify the foreign country below and provide requested information in FORM 1, Part C.
No ☒	

If another agency is used, has permission been obtained from the agency or institution?	
Yes ☐	If yes, please describe and include approval communication as an attachment. If no, please describe plans to obtain approval.
No ☐	
N/A ☒	
Is this a Cooperative Project with another Institution or Agency?	
Yes ☐	If yes, specify the other institutions or agencies and provide requested information in FORM 1, Part C.
No ☒	
Has the research activity been reviewed and approved by another review board for the protection of human subjects elsewhere?	
Yes ☐	If yes, provide requested information in FORM 1, Part C.
No ☒	
Human Subject Participants (Check all that apply.)	
☐	Children/Adolescents (Persons who are minors, under age 18)
☒	Males
☒	Females
☐	Inpatients
☐	Outpatients
☐	Pregnant Women
☐	Mentally Handicapped or Disabled
☐	Physically Handicapped or Disabled
☐	Fetuses
☐	Abortuses
☐	Prisoners
☐	Non-English Speaking
☒	Lynn University Students or Other Students
☐	Lynn University Alumni
☐	Lynn University Employees
☐	Other vulnerable subjects (persons who are at risk (physically, socially, legally, emotionally, economically, or whose reputation could be at risk). Specify.
Are participants drawn from a classroom or special program?	
Yes ☒	If yes, provide requested information in FORM 1, Part C.
No ☐	
Number of subjects: 100	
Age range of human subjects: 18-25	
Where are the subjects of this research activity located? Lynn University	
What kind of human samples (e.g., blood) or data (e.g., private information, surveys) will be involved? Survey information	
Does the research activity involve the use of an investigational new drug (IND)?	
Yes ☐	If yes, provide requested information in FORM 1, Part C.
No ☒	
Does the research activity involve the use of an Investigational Device (IDE)?	
Yes ☐	If yes, provide requested information in FORM 1, Part C.
No ☒	
Is there a Written Informed Consent form that is signed by participants/parents/guardians?	
Yes ☒	If yes, please attach Written Consent Form to be Signed in an Appendix. (Fully discuss in Form 1, Part C. (The Research Protocol, J. Consent and Assent Processes and Documents)
No ☐	

Is there a Written Informed Consent but a request is being made to the IRB to waive the documentation requirement (waive the signature as consent documentation)?	
Yes ☐ No ☒	If yes, please attach Written Consent Form in an Appendix. Include justification as to why the request for waiving the documentation requirement (Fully discuss in Form 1, Part C.)
Is there a short form, oral consent, IRB request for waiver of informed consent or other alteration in informed consent?	
Yes ☐ No ☒	If yes, please attach short form for Written Consent with script, or Oral Consent script in an Appendix. (Fully discuss in Form 1, Part C.)
Are participants to be minors?	
Yes ☐ No ☒	If yes, include a child assent script and Assent Form if applicable in FORM 1, Part C
Is deception involved?	
Yes ☐ No ☒	If deception is major, (intentional deception), provide requested information in FORM 1, Part C.
Funding (Check one of the following.)	
☐	Currently funded
☐	Pending funding decision
☐	Funding proposal in process of development
☒	Not funded
For Funded Research Activity: -Funding Agency or Research Sponsor	
☐	Grant/Contract Project Title:
☐	Please submit one complete copy of all externally funded proposals with form.
☐	Federal Agency Grant/Contract #
☐	Industry
☐	Extramural (other)
☐	Internal
Name of agency official, if any, to be notified of IRB approval:	
Title:	
Address:	
Phone Number (work):	
Fax Number:	
E-mail:	

FORM 1, Part B. Certifications and Signatures

CERTIFICATIONS

1. I am knowledgeable about the IRB policies and procedures and I will adhere to the policies and procedures explained therein.
2. I understand that I must seek IRB approval to advertise to recruit subjects.
3. I certify that the method of obtaining informed consent as approved by the Lynn University IRB will be followed during the period covered by this research project. Consent forms will bear the research protocol expiration date. Any future changes will be submitted to the IRB for review and approval prior to implementation. Should I wish to make changes in the approved human subjects protocol for this project, I will submit them for review prior to initiating the changes.

4. If any problems involving human subjects occur, I will adhere to the policies and procedures for emergencies and reporting of adverse events explained therein. Problems include unanticipated side effects or adverse reactions from participation in the project and any injuries. If any emergency occurs I should first call 911 and be prepared to provide the following information to the dispatcher: (1) type of injury and what assistance is needed, (2) number of victims, (3) the location and instructions on how to get there, and (4) their name and telephone number. I will promptly notify (verbally first, then in writing) my sponsor and Chair of the Institutional Review Board.
6. I understand that I must seek review for continuation of projects that last longer than one year or earlier if specified by the IRB. I will seek review for continuation no later than one month prior to the anniversary of initial approval or earlier if requested by the IRB. I further agree to have a third party observe the consent process and the research should that be requested by the IRB.
7. I will prepare a summary report of the project results, to include identification of any adverse effects occurring to human subjects in this study within 30 days of the conclusion of data collection (termination of study).
8. I understand that a copy of the IRB approval letter must appear in the Appendix of the final document (professional publications or report, project, thesis or dissertation). IRB procedures and approval process will be described in the dissertation/thesis/ or other professional publication or report. This is typically the "Methods" section of the report. I will maintain appropriate records.
9. I understand that applications and research protocols and other IRB requests for review that are submitted without all requested information and materials will be returned to me without IRB review.

SIGNATURES (To sign the document, click on the pink tab below and follow the computer prompts)

Melissa Lehman — Digitally signed by Melissa Lehman DN: cn=Melissa Lehman, o=Lynn University, ou=College of Arts and Sciences, email=mlehman@lynn.edu, c=US Date: 2016.11.16 13:35:33 -05'00' — 11-16-16

Signature of Applicant — Date

Prior to submission to the IRB, the Research Application and the Research Proposal (FORM 1, Part C.) must be approved: (1) by a faculty sponsor in the case of student research, (2) by a faculty sponsor in the case of research by an employee without a doctorate, (3) by the supervisory Vice-President in the case of staff employee research, and (4) by the College Dean in the case of faculty research.

Signature of Sponsor (required for students) — Date

Name — Position — Academic Unit/Department

Signature of Sponsor (for non-doctoral employees) — Date

Name — Position — Academic Unit/Department

Signature of Vice President (for staff employee) — Date

Name — Position — Academic Unit/Department

Signature of College Dean (for faculty) — 11/17/16 — Date

K. Carter-Tellison — Dean — CAS

Name — Position — Academic Unit/Department

FORM 1, Part C. Continue Application with Completion of Research Protocol

Principal Investigator: Melissa Lehman
Project Title: Teaching Students to Apply Learning Strategies to Coursework

DO NOT WRITE BELOW THIS LINE: FOR IRB USE ONLY

APPLICATION AND PROTOCOL FOR REVIEW OF RESEARCH INVOLVING HUMAN SUBJECTS OF A NEW PROJECT
IRB Project Number
Request for Exempt Status ☐ Expedited Review ☐ Convened Full-Board ☐
IRB ACTION BY IRB CHAIR OR ANOTHER MEMBER OR MEMBERS DESIGNATED BY THE CHAIR
Exemption Status (See FORM 2): Approved ☐ Approved w/provision(s) ☐
Expedited Review (See FORM 3): Approved ☐ Approved w/provision(s) ☐
Complete FORM 2 (Exempt Status, including categories for exempt status) and Resubmit ☐
Complete FORM 3 (Expedited Review, including categories for expedited review) and Resubmit ☐
Referred For Convened Full-Board Review ☐
Comments:
Consent Required: No ☐ Yes ☐ Not Applicable ☐ Written ☐ Signed ☐
Consent forms must bear the research protocol expiration date of _____.
Application to Continue/Renew is due: (1) For an Expedited IRB Review, one month prior to the due date for renewal ☐ (2) For review of research with exempt status, by a College or School Annual Review of Research Committee ☐.
Other Comments:
IRB Reviewer: _____ Title _____ Date _____
IRB Reviewer: _____ Title _____ Date _____
IRB Reviewer: _____ Title _____ Date _____
IRB Reviewer: _____ Title _____ Date _____
IRB Reviewer: _____ Title _____ Date _____

Name of IRB Chair (Print) _____

Signature of IRB Chair_____ Date:_____

IRB ACTION by the CONVENED FULL BOARD *If Applicable*
Date of IRB Review of Application and Research Protocol _____
IRB ACTION: Approved☐ Approved w/provision(s)☐ Not Approved☐ Other☐
Comments:
Consent Required: No ☐ Yes ☐ Not Applicable ☐ Written ☐ Signed ☐
Consent forms must bear the research protocol expiration date of _____.
Application to Continue/Renew including an updated consent, is due: (1) For a Convened Full-Board Review, two months prior to the due date for renewal _____ (2) For an Expedited IRB Review, one month prior to the due date for renewal _____ (3) For review of research with exempt status, one month prior to the due date for renewal _____.
Other Comments:

Name of IRB Chair (Print) _____

Signature of IRB Chair_____ Date: _____

FORM 1, Part C. The Research Protocol

a. Abstract

The purpose of this study is to examine whether instruction on effective learning strategies can be applied in an academic setting to help improve student learning in specific courses. Research in the field of cognitive psychology has established various effective learning strategies; however, research has also shown that many students do not use these strategies, often because they aren't aware of their effectiveness. This study will consist of online sessions teaching Lynn students about some simple and effective learning strategies, and then ask students to use these strategies in studying for exams in one of their classes. Each online session will teach students about one strategy using short videos, questionnaires, and practice tasks. Students will be asked to try to use these strategies in learning the material for a specific class. After the semester is over, students will complete a survey indicating their use and perception of these strategies. Additionally, student grades in the specific class will be collected. Outcomes to be measured include 1) whether students successfully learned the strategies, 2) whether students applied these strategies in their classes, 3) whether students perceived these strategies as being helpful to their learning, and 4) whether use of these strategies was correlated to performance in the class.

The study population of interest is college students, and the sample will consist of Lynn students. The study will utilize a non-experimental design, and will use both descriptive and correlational measures to address the above outcomes. This study will also serve as a pilot for future experimental work on this topic.

b. Introduction

Decades of research in the field of cognitive psychology have established various effective learning strategies that can be used to help students learn many types of materials across many domains (Dunlosky, 2013; Roediger & Pyc, 2012). Some of the most effective learning strategies identified by cognitive psychology research include spaced practice, in which studying is spaced across multiple sessions rather than taking place all at once (Benjamin & Tullis, 2010); retrieval practice, in which to-be-learned material is studied and then recalled multiple times rather than simply re-read (Roediger, Putnam, & Smith, 2011); elaboration, in which connections are drawn between to-be-learned information and existing knowledge (McDaniel & Donnelyl, 1996), and interleaving, in which study is alternated between different ideas rather than focusing on a single idea for an extended period (Robert, 2012). Despite the well-known effectiveness of these strategies among the research community, their effectiveness is unknown to much of the general population. Research has also shown that students typically do not use many of these strategies, often because they aren't aware of their effectiveness (Karpicke, Butler, & Roediger, 2009.

Recently, The Learning Scientists, a group of cognitive scientists dedicated to educating the

public on effective learning strategies, has released a series of freely accessible materials aimed to make research on effective study strategies more accessible to students, including informative videos about the learning strategies listed above, among others (Smith, Weinstein, Wooldridge, 2016). This study will make use of those materials to determine whether they can be utilized to teach students about these strategies and encourage students to implement these strategies in their coursework.

Although the learning strategies have been extensively studied by cognitive psychologists, the training procedures used in this study will be novel. Some of the methodology will be modeled on other studies examining learning interventions in academic settings (Shannon, 2008).

c. Objectives

The objectives of this study are to answer the following research questions:

Research Question 1: Will students be able to successfully recall the learning strategies after viewing the instructional videos?

Research Question 2: Will students apply one or more strategy in their class?

Research Question 3: Will students perceive these strategies as being helpful to their learning of course material?

Research Question 4: Is reported use of these strategies correlated with performance in the class?

d. Study Design and Methods

Lynn students will be used for this study, recruited from multiple Lynn courses in which the instructor has agreed to 1) allow recruitment in class, 2) allow for 5-10 minutes of class time to be dedicated to this study, and 3) offer extra credit in the course for participation (either in this study or via completion of an alternate assignment, described in the Rationale for Subject Selection section below). This study will take place during the 2017 Spring and Fall semesters. Recruitment will occur mid-semester, after students have already completed approximately one half of the course work for the semester. After recruitment, subjects will receive introductory information at the end of one of their class periods, and informed consent will be obtained (see Appendix A). All subjects who consent to participation will be instructed about the online procedures, which will take place throughout the remainder of the semester.

All training sessions will occur online, and instructions for each session will be sent to students by email. Each online training session will take 5-10 minutes. During the training session, students will watch one of the learning strategy videos, and then will be asked some questions about the video and about practicing the learning strategy. Training sessions will be completed online during a period of 3-6 weeks. After the training sessions are complete, students will be asked to try to utilize the strategies that they learned in the training sessions to help them prepare for their class. Students will be contacted again at a later date with a reminder to utilize the strategies. After all assignments for the specified course have been completed for the semester,

students will complete a questionnaire addressing Research Questions 1-3, and at the end of the semester, grades will be collected from the instructor of each class to address Research Question 4.

Links to the videos, along with sample questions to be included in the questionnaires, are included with the Research Materials in Appendix B.

e. Inclusion and Exclusion Criteria

All Lynn students at least 18 years of age are eligible for inclusion in the study.

f. Monitoring Subjects and Criteria for Withdrawal of Subjects from the Study

Students will complete several online sessions over the course of 3-6 weeks. They can withdraw at any time.

g. Analysis of the Study

Retention of information will be measured by scoring student responses on questionnaires about their understanding of each learning strategy. Application of strategies will be measured by calculating the number of strategies that each student reported using in their class. Student perception of strategies will measure how helpful students perceive these strategies to be on a Likert scale. Performance in class will be calculated by collecting grade information from both before and after the training procedure. Descriptive statistics will be used for all measures. These include calculating means in addition to correlational analysis. The desired number of subjects is based on previous research on learning in college settings.

h. Human Subject Protections

(1) Rationale for Subject Selection

As this is a study on learning, the population of interest for this study is college students, and thus Lynn students will be used. This sample will be taken from the population of interest; additionally, subjects in this sample stand to benefit from the procedures. Subjects will be recruited for this study from classes in which the instructor has agreed to participate. A research assistant will recruit subjects from each class during a class session.

Subjects will be students recruited from a college classroom. Procedures involved utilize tasks typically associated with an educational setting, including studying material and attempting to commit that material to memory. Subjects will not be required to miss any class. Subjects will be compensated with extra credit in the course. As participation is not a required part of the course grade, it will not be included in the grade breakdown in the syllabus. Non-participation will not adversely affect a student's grade, and students who do not wish to participate will be offered an alternative assignment for an equal amount of extra credit (see Appendix C). As the study will be conducted online, it will not affect non-participating students during class time. These procedures and consequences will be

described to students using a script during recruitment (see Appendix C).

(2) **Evaluation of Benefits and Risks/Discomforts:**

(a) **Potential Benefits**

Subjects will learn about effective learning strategies that they will be able to use in their classes and which can potentially increase their performance in any class, or in other real-world settings where retention of information is necessary. The same benefits apply to society, and information gained from this study could be useful not only to psychologists, but to any educator or learner.

(b) **Potential Risks**

There are minimal risks involved in participation in this study, as this study involves similar tasks to those encountered in everyday educational settings. Data will be de-identified by providing subjects with subject ID numbers to be used throughout the study. Their data, including grade data, will be collected using the subject ID numbers, and their names will never be stored with any data from the study.

(3) **Cooperative Project with Another Institution or Agency**

No other institutions or agencies are involved.

(4) **Involvement of Another IRB**

No other IRB is involved.

(5) **Human Subjects in a Foreign Country**

This research does not involve human subjects in a foreign country.

i. Adverse Event Reporting and Data Monitoring

If any adverse events occur, the PIs will immediately report this even to the members of the IRB. As described above, data will be de-identified before collection, and no identifying information will be stored with data, protecting the confidentiality of all participants.

j. Consent and Assent Processes and Documents

Subjects will be recruited from classrooms in which instructors have agreed to allow participation in the study. A researcher will recruit subjects by reading the recruitment script (see Appendix C), and then reading through the informed consent document with all interested students. Subjects will then be given the informed consent form to read and sign, and they will be provided with a copy.

No non-English speaking subjects, minors, or vulnerable populations will be used.

As described under "Potential Risks", anonymity will be assured via the assignment of subject ID numbers. All data collected, including grade information, will be entered with the subject ID number. Subjects must use their assigned subject ID number when completing all tasks involved in the study. All data stored from the study will be de-identified. A list linking student names to their subject ID numbers will be kept in a secured file only long enough to give students their credit for participation. After credit is assigned, this document will be destroyed.

k. References.

Benjamin, A. S., & Tullis, J. (2010) What makes distributed practice effective? *Cognitive Psychology*, 61, 228-247.

Dunlosky, J. (2013). Strengthening the student toolbox: Study strategies to boost learning. *American Educator,* 12-21.

Dunlosky, J., Rawson, K. A., Marsh, E. J., Nathan, M. J., & Willingham, D. T. (2013). Improving students' learning with effective learning techniques: Promising directions from cognitive and educational psychology. *Association for Psychological Science, 14*(1), 4-58.

Karpicke, J. D., Butler, A.C., & Roediger, H. L. (2009). Metacognitive strategies in student learning: Do students practice retrieval when they study on their own? *Memory, 17*, 471-479

Mayer, R. E., & Anderson, R. B. (1992). The instructive animation: Helping students build connections between words and pictures in multimedia learning. *Journal of Educational Psychology, 4,* 444-452.

McDaniel, M. A., & Donnelly, C. M. (1996). Learning with analogy and elaborative interrogation. *Journal of Educational Psychology, 88*, 508-519.

Rawson, K. A., Thomas, R. C., & Jacoby, L. L. (2014). The power of examples: Illustrative examples enhance conceptual learning of declarative concepts. *Educational Psychology* Review, 27, 483-504.

Roediger, H. L., Putnam, A. L., & Smith, M. A. (2011). Ten benefits of testing and their applications to educational practice. In J. Mestre & B. Ross (Eds.), *Psychology of learning and motivation: Cognition in Education* (pp. 1-36). Oxford: Elsevier.

Roediger, H. L., III., & Pyc, M. A. (2012). Inexpensive techniques to improve education: Applying cognitive psychology to enhance educational practice. *Journal of Applied Research in Memory and Cognition, 1*(4), 242-248.

Rohrer, D. (2012). Interleaving helps students distinguish among similar concepts. *Educational Psychology Review, 24*, 355-367.

Shannon, S. V. (2008). Using metacognitive strategies and learning styles to create self-directed learners. *Institute for Learning Styles Journal, 1*, 14-28.

Smith, M. A., Weinstein, Y., & Wooldridge, C. (2016). The Learning Scientists Six Strategies for Effective Learning: Videos for Teachers and Students. http://www.learningscientists.org/videos/

Weinstein, C. E., Ridley, S. D., Dahl, T., & Weber, S. E. (1988). Helping students develop strategies for effective learning. *Educational Leadership,* 17-19.

Wong, B. Y. L. (1985). Self-questioning instructional research: A review. *Review of Educational Research, 55*, 227-268.

l. Research Protocol Appendix:

Appendices include the Informed Consent Document (Appendix A), the Research Materials (Appendix B), and the Recruitment Procedures (Appendix C).

The researchers have on record the approval of the Learning Scientists, the authors of the free online videos used in this study, to use their materials, along with the NIH "Protecting Human Research Participants" course completion certificates for both the Principle Investigator and any Research Assistants. These documents, along with the Curriculum Vitae of the Principle Investigator are available upon request.

Appendix A

RESEARCH PARTICIPANT CONSENT FORM

Teaching Students to Apply Learning Strategies to Coursework
IRB Project Number:
Melissa Lehman, Ph.D.
College of Arts and Sciences, Lynn University

Purpose of Research
The overall purpose of this research is to investigate the effects of different study techniques on learning.

Specific Procedures
Your participation will involve learning about strategies that will help you to better learn course material. You will participate in short weekly online training sessions over the course of a few weeks. During each session, you will watch a short (2-3 minute) video teaching you about a learning strategy, then you will answer questions about the video through an online form, after which you will practice using the learning strategy. You will be asked to use the learning strategy when studying for exams in one of your classes (specified at the start of the experiment), and information about your grades in that course will be collected at the end of the semester).

Duration of Participation and Compensation
The total duration of participation will be approximately 60 minutes; however, this will be spread across about 6 weeks. You will participate in short online training sessions each week, each of whish should take about 10 minutes.

Risks
Minimal: The risks are not greater than those ordinarily encountered in daily life.

Benefits
You will acquire knowledge about learning strategies that may be useful in your future coursework.

Compensation
If you choose to participate in this study, you will receive extra credit in the course in which your instructor has agreed to allow participation in exchange for extra credit, in an amount up to 2% of your final grade.

Confidentiality
Any data collected during this experiment will not be associated with any of your personal information like your name or ID number. Your data will be retained indefinitely in computer files accessible only to members of the research team, with no identifying personal information stored with your data. The project's research records may be reviewed by departments at Lynn University responsible for regulatory and research oversight.

Voluntary Nature of Participation

You do not have to participate in this research project. If you agree to participate you can withdraw your participation at any time without penalty. You will receive credit based on the amount of time spent in the experiment even if you choose to withdraw your participation.

Contact Information

If you have any questions about this research project, you can contact Dr. Melissa Lehman (Phone: 561-237-7454, Email: mlehman@lynn.edu). For any questions regarding your rights as a research subject, you may call Dr. Robert Reich, Chair of the Lynn University Institutional Review Board for the Protection of Human Subjects, at (561) 237-7104 or reich@lynn.edu

Documentation of Informed Consent

I have had the opportunity to read this consent form and have the research study explained. I have had the opportunity to ask questions about the research project and my questions have been answered. I am prepared to participate in the research project described above. I will receive a copy of this consent form after I sign it.

_____ _____

Participant's Signature Date

_____

Participant's Name

_____

Participant's Email Address

_____ _____

Researcher's Signature Date

Appendix B

Research Materials

Videos to be used: http://www.learningscientists.org/videos/

Sample questions for an online training session (to be answered via Qualtrics survey platform):

1) Explain Retrieval Practice, as described in the video you just watched, in your own words.
2) Give an example of how you might use Retrieval Practice when preparing for an exam in your class.
3) How could you combine Retrieval Practice with one of the previous strategies you learned about in this experiment?
4) How can you try out using Retrieval Practice with some of your course materials this week?

Strategy retention survey (to be sent out after students have completed the training sessions:

"Over the past few weeks, you have completed training sessions on the following learning strategies: spaced practice, retrieval practice, elaboration, and interleaving. Please describe each strategy in your own words:

Spaced Practice
Retrieval Practice
Elaboration
Interleaving

You will receive an email next week with the next step for preparing for your final exam"

Reminder email (to be sent out after students have completed all online training sessions, but before the final exam is given in the specified course):

"Last week, we asked you to explain each of the learning strategies that you learned about in your own words. Each of the learning strategies is described below. We now ask that when preparing for your final exam in _____, you use these strategies to help you learn the material. You can use each strategy by itself, or you can combine these strategies to use multiple strategies at the same time.

Spaced Practice: space out your studying across multiple sessions, rather than studying all at once, repeating the material across sessions.

Retrieval Practice: test yourself multiple times on the material that you have learned, and don't look at the answer until you have tried to retrieve it yourself.

Elaboration: draw connections between the information you are learning and what you already know.

Interleaving: alternate between studying for different topics rather than focusing on a single topic for a long time.

We will check back with you after you complete your final exam for a follow-up."

Sample questions for final survey:

1) Please indicate which of the following strategies you used when studying for your final exam in _____:
   a. Spaced Practice
   b. Retrieval Practice
   c. Elaboration
   d. Interleaving

2) Please indicate how much time you spent using the following strategies while studying for your final exam in _____:
   a. Spaced Practice
   b. Retrieval Practice
   c. Elaboration
   d. Interleaving

3) Please rate how effective you thought each of the strategies was in helping you to learn the material for your final exam in _____:
   a. Spaced Practice
   b. Retrieval Practice
   c. Elaboration
   d. Interleaving

4) Please rate how much you enjoyed using each of the strategies:
   a. Spaced Practice
   b. Retrieval Practice
   c. Elaboration
   d. Interleaving

Appendix C

Subject Recruitment Procedures

Script

We are looking for students to participate in a research project about learning strategies. Your _____ professor has agreed to give you extra credit for your participation worth _____. If you agree to participate in this project, you will participate in weekly online sessions, each taking 5-10 minutes. During each session, you will learn about an effective learning strategy that has been supported by research, and then you will answer questions about that learning strategy. After you have completed all sessions, you will be asked to recall all of the learning strategies and attempt to use these strategies when studying for an exam in your _____ class. Finally, at the end of the study, you will report on your use of the strategies in preparing for your exam, and your grades will be collected. All sessions will take place online – you will be responsible for checking your email for links to each online session. Each session must be completed during the week in which it starts (when the link is emailed to you), but when you complete it is up to you. You will need to complete it in a quiet environment or using headphones.

All data collection will be confidential, meaning that your data will not be shared with anyone, including your professor. You will be assigned a code number, and all of your data will be stored with your code number rather than your name. At the end of the semester, your grades will be collected from your professor again using your code number (so no data associating your name with your grade or performance will be stored).

Alternative Assignment

If you do not wish to participate in the study, you will still have an opportunity to earn extra credit by completing an alternative assignment. For this assignment, you will be writing an APA format paper summarizing 4 learning strategies that have been shown to be effective by research in cognitive psychology. The paper must be at least 3 pages, in proper APA format, including in-text citations, and it must have a reference page. The paper must reference at least 4 peer-reviewed articles from psychology journals. The paper will be graded by the researchers according to the Lynn Written Communications rubric and will be assigned a corresponding number of extra credit points up to _____.

IRB FORM 2

LYNN UNIVERSITY INSTITUTIONAL REVIEW BOARD
REQUEST FOR IRB EXEMPTION

The following information must be submitted in typed or word processed format. Fill in all information lines. If information is not applicable, indicate by answering "N/A."

Principal Investigator: Melissa Lehman, Ph.D.
Project Title: Teaching Students to Apply Learning Strategies to Coursework
Today's Date: 11-16-16

Policy and Procedures

In general, research that does not propose to disrupt or manipulate subjects' normal life experiences, or incorporate any form of intrusive procedures, may be declared exempted from expedited or full IRB review. Major considerations when determining if an exempted level of review is appropriate include level of risk and the presence or absence of deceptive procedures. Minimal risk means that the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examination or tests. Any degree of deception disqualifies a research protocol from exempted review. Research that is judged to involve more than minimal risk, intentional deception, or a protected population and does not meet the categories for exempt or expedited review, must be presented to the entire review board for discussion and consideration of approval or non-approval.

Informed Consent. Some exempt research projects ethically require informed consent. If, in the investigator's opinion, the study requires informed consent, the method used to obtain informed consent should be described and the proposed consent form submitted as per FORM 1. If the study does not require consent, it should be so stated and justified.

Complete FORM 2, Part A and indicate the appropriate *Exemption Category (categories)* in FORM 2, Part B. Submit FORM 2 along with the IRB Application and Research Protocol (FORM 1) when the investigator considers that the proposal may qualify for an exemption from Federal Regulations as noted in **45 CFR §46.101(b),** exempt from full board or expedited review. If a project meets any of the six exemption categories found in **45 CFR §46.101(b),** and is not excluded by the limitations for the specific categories, it may be exempt from full review. The IRB reserves the right to request the investigator to provide additional information concerning the proposal. After review, the IRB will send the applicant formal notification of whether or not the proposal qualifies for exempt status.

FORM 2, Part A. Checklist for Exempted Review (Limitations) Check responses to the seven items.

1.	It is clear that the nature of the proposed research fits one of the categories listed in FORM 2, Part B (Research Activities Eligible for Exempted Review CFR 45 §46.101(b).)	Yes ☒ No ☐
2.	No implications for criminal or civil liability, employability, or damage to subject's financial standing or reputation would exist if data were known outside the study.	Yes ☒ No ☐
3.	The research does not use a protected group as subjects (e.g., e.g. fetuses, pregnant women, prisoners, mentally handicapped, or minors.	Yes ☒ No ☐
4.	The study does not present more than a MINIMAL RISK to subjects	Yes ☒ No ☐
5.	The study does not involve DECEPTION.	Yes ☒ No ☐
6.	Appropriate informed consent procedures will be followed.	Yes ☒ No ☐
7.	The study will not be conducted in another country.	Yes ☒ No ☐

"Yes" answers to all of the above are required to qualify for a recommendation for exempted review. If the answer to any one of these questions is "no," then expedited or full IRB review is required.

FORM 2 Part B. Research Activities Eligible for Exempted Review CFR 45 §46.101(b).
Please indicate into which of the Exemption Categories your research falls by checking all that apply.

☒ (1) Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as
- ☐ (i) research on regular and special education instructional strategies, or
- ☒ (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

☐ (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observations of public behavior unless: (i) information obtained is recorded in such a manner that human subjects can be identified directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

☐ (3) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement) survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (2) of this section if:
- ☐ (i) The human subjects are elected or appointed public officials or candidates for public office; or
- ☐ (ii) Federal statues(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter. (No child subjects)

☐ (4). Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. (Retrospective)

☐ (5) Research and demonstration projects which are conducted by or subject to the approval of any [Federal] Department or Agency heads, and which are designed to study, evaluate, or otherwise examine:
- ☐ (i) Public benefit or service programs;
- ☐ (ii) procedures for obtaining benefits or services under those programs;
- ☐ (iii) possible changes in or alternatives to those programs or procedures; or
- ☐ (iv) possible changes in methods or levels of payment for benefits or services under those programs.

☐ (6) Taste and food quality evaluation and consumer acceptance studies (i) if wholesome foods without additives are consumed or (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.

On an attached page, please explain how your project fits into the indicated category(s) CFR 45 §46.101(b). Typed response.

SIGNATURES (To sign the document, click on the pink tab below and follow the computer prompts)

Signature of Sponsor (required for students)		Date
Name	Position	Academic Unit/Department
Signature of Sponsor (for non-doctoral employees)		Date
Name	Position	Academic Unit/Department
Signature of Vice President (for staff employee)		Date
Name	Position	Academic Unit/Department
Signature of College Dean (for faculty)		Date 11/17/16
Name K. Carter-Tellison	Position Dean	Academic Unit/Department CAS

NOTE: Applications without all requested information will be returned without IRB review.

Last revision: March 2010.

FORM 2 – Explanation

This study aims to examine whether students can be taught to use empirically-supported learning strategies, and apply these strategies to course material. This research will be conducted in a commonly accepted educational setting – subjects will be recruited from college classes and asked to apply the learning strategies in those classes. It will involving normal educational practices, including studying for quizzes and exams. Specifically, the aim is to examine the effectiveness of instructional techniques – training on using specific learning strategies – on improving student learning. The study involves no more than minimal risk, and all data will be de-identified when it is collected.

This research meets the qualifications for 45 CFR 46.101(b)(1) exemption as specified by the Lynn University Policies and Procedures document and the HHS.gov decision chart (http://www.hhs.gov/ohrp/regulations-and-policy/decision-charts/index.html#c3).